

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A radio communication method by which radio communication apparatuses transmit beacons using beacon periods so that the beacons do not conflict with one another, comprising:

a step of producing first moving status information received from a radio communication apparatus, and information including an identifier for specifying another radio communication apparatus notifying the first moving status information and a beacon slot position, as beacon period occupancy information included in the beacon;

a step of adding second moving status information to a beacon, notifying the radio communication apparatus about a request for moving of a beacon slot position of the other radio communication apparatus;

a step of transmitting the beacon at a beacon slot of the other radio communication apparatus;

a detection step in which a radio communication apparatus detects whether in the beacon period there are empty beacon slots before the beacon slot which is the period for transmitting beacons of that radio communication apparatus;~~apparatus;~~

~~a step in which, when such empty beacon slots are detected in the detection step, the radio communication apparatus starts count of a specified number of super frames after which the beacon slot of the radio communication apparatus will be moved to one of the empty beacon slots;~~

~~a step in which the radio communication apparatus adds to a beacon moving status information for notifying the other radio communication apparatuses of the beacon slot movement processing state of the radio communication apparatus and also adds to the beacon period occupancy information that consists of moving status~~

~~information received from the other radio communication apparatuses, identifiers for specifying the radio communication apparatuses sending the moving status information, and a beacon slot position, which are linked, and transmits the beacon at the beacon slot of the radio communication apparatus; and~~

a step of moving the beacon slot to the empty beacon slot and, moving after the specified number of super frames,

~~a step in which, after elapse of the specified number of super frames, the other radio communication apparatus moves its beacon slot to the empty beacon slot and transmits the beacon after the specified number of super frames, when an empty beacon slot is detected in the detection step,~~

at each super frame up to a specified super frame,

before the end of beacon period from the beacon slot of the other radio communication apparatus,

the beacon transmitted from the radio communication apparatus programmed to move is not received,

or transmission of the beacon from the radio communication apparatus programmed to move is not confirmed from the beacon period occupancy information.

2.-4. (Cancelled).

5. (Original) A radio communication method according to claim 1, characterized in that the moving status information is a counter value of a movable counter that counts the specified number of super frames or a flag.

6.-7. (Cancelled).

8. (Currently Amended) A radio communication apparatus comprising:

a beacon receiving unit that receives a beacon and extracts a frame;

a frame judging unit that judges whether the extracted frame is a beacon frame and records beacon period occupancy information ~~that consists of in a recording~~

unit, including the reception slot position of the beacon, an identifier specifying the radio communication apparatus that transmitted the beacon, and moving status information indicating whether the radio communication apparatus that transmitted the beacon is moving its beacon slot position, and which are linked, and also records the beacon period occupancy information included in the beacon frame;

a beacon slot position control unit that outputs second moving status information notifying a request for moving of the beacon slot position of the radio communication apparatus to another radio communication apparatuses, when empty beacon slots before the beacon slot of the radio communication apparatus are detected in a beacon period by checking all the beacon period occupancy information recorded in the recording unit, ~~the counter value in a movable counter of the specified number of super frames until the beacon slot of the radio communication apparatus is moved to the empty beacon slot, and commands change of the beacon slot position of the radio communication apparatus in response to a notice of completion of countdown from the movable counter;~~

~~— a beacon transmission command unit that detects its own slot position that had been determined by the beacon slot position control unit, and orders transmission of a beacon; and~~

a frame forming unit that forms, ~~in response to the instruction from the beacon transmission command unit,~~ a beacon frame including the beacon period occupancy information generated from the received beacon, ~~moving status information of the radio communication apparatus, and~~ the second moving status information beacon slot length information indicating the total length of beacon slots calculated from the beacon received by the radio communication apparatus;

a beacon transmission command unit that detects the slot position of the radio communication apparatus and commands the transmission of a beacon frame formed by the frame forming unit,

wherein the beacon slot position control unit outputs beacon transmission timing that moved the beacon slot of the radio communication apparatus to the empty beacon slot to the beacon transmission command unit after the specified number of super frames, when an empty beacon slot is detected before the beacon slot within a

beacon period on the basis of all the beacon period occupancy information recorded in the recording unit, and when the beacon transmitted from the other radio communication apparatus programmed to move is not received, or transmission of the beacon from the other radio communication apparatus programmed to move is not confirmed from the beacon period occupancy information before the end of beacon period from the beacon slot of the radio communication apparatus, in each of super frames up to the specified super frame; and

the beacon transmission command unit transmits the beacon frame from the frame forming unit in accordance with the beacon transmission timing..

9.-10. (Cancelled).

11. (Original) A radio communication apparatus according to claim 8, characterized in that, when the beacon slot position control unit detects a change of beacon formation, that is, the arrangement of beacon slot positions of the radio communication apparatuses, by checking the received beacon and the beacon period occupancy information, the beacon position control unit performs detection of an empty beacon slot and movement processing for moving its beacon slot position to the empty beacon slot.

12. (Original) A radio communication apparatus according to claim 8, characterized in that the moving status information is a counter value of a movable counter that counts a specified number of super frames or a flag.

13.-14. (Cancelled).

15. (Original) A radio communication method according to claim 1, characterized in that the moving status information further includes movement destination slot position information indicating the planned movement destination of the beacon slot position of the radio communication apparatus, and

when the radio communication apparatus detects that there is a empty beacon slot other than the beacon slots designated by the movement destination slot position information of the other radio communication apparatuses which transmit their beacons during the time from the beacon slot of the radio communication apparatus in

question until the end of the beacon period, the radio communication apparatus selects any one of these empty beacon slots, notifies the other radio communication apparatuses that this empty beacon slot will be the movement destination beacon slot position of the radio communication apparatus in question, and starts count of the specified super frames.

16. (Currently Amended) A radio communication method according to claim 15, characterized in that, when the radio communication apparatus selects the highest empty beacon slot, if the radio communication apparatus is not in the ~~lowest-rear~~most slot, the radio communication apparatus repeatedly selects the next highest empty slot in the next super frame until the radio communication apparatus is in the lowest slot.

17. (Original) A radio communication method according to claim 15, characterized in that the radio communication apparatus selects an arbitrary beacon slot among the empty beacon slots.

18. (Currently Amended) A radio communication method according to claim 1, characterized by comprising a step in which the radio communication apparatus detects, when the counter value of the radio communication apparatus is the maximum value while the radio communication apparatus is counting the specified number of super frames, other radio communication apparatuses are found to have the maximum counter value from the first moving status information or other radio communication apparatuses are found to have the maximum counter value from beacon period occupancy information, or when the counter value of the radio communication apparatus is the maximum value -1, other radio communication apparatuses from the moving status information, and, when the counter value of the radio communication apparatus is neither the maximum value nor the maximum value - 1, other radio communication apparatuses having the identical counter value from the moving status information, or other radio communication apparatuses having a value of the counter value + 1 from the beacon period occupancy information, and in that

when the radio communication apparatus detects radio communication apparatuses satisfying any one of the above conditions, the radio communication

apparatus in the lowest slot position among the radio communication apparatuses continues the count and the other radio communication apparatuses are reset to the specified counter value.

19. (Original) A radio communication method according to claim 18, characterized in that, when the radio communication apparatus receives the beacon period occupancy information of another radio communication apparatus having the maximum value or a counter value identical with the counter value of the radio communication apparatus in question other than 0 during counting, the radio communication apparatus stops the count and resets the counter value of the radio communication apparatus to the maximum value.

20. (Original) A radio communication method according to claim 1, characterized in that the empty beacon slot which is the movement destination of the beacon slot of the radio communication apparatus is the highest empty beacon slot.

21. (Original) A radio communication apparatus according to claim 8, characterized in that the moving status information further includes movement destination slot position information indicating the planned beacon slot movement destination of the radio communication apparatus, and

when there is an empty beacon slot other than beacon slots designated by the movement destination slot position information of the other radio communication apparatuses that transmit beacons during the time from the beacon slot of the radio communication apparatus in question until the end of the beacon period, the beacon slot position control unit records moving status information, that the empty beacon slot is planned as the beacon slot movement destination, of the radio communication apparatus in the recording unit and sets the specified count in the movable counter, and

the frame forming unit forms a beacon frame including the moving status information of the radio communication apparatus recorded in the recording unit.

22. (Original) A radio communication apparatus according to claim 21, characterized in that the beacon slot position control unit designates the highest empty slot other than beacon slots to which other radio communication apparatuses

which transmit beacons during the time from the beacon slot of the radio communication apparatus in question until the end of the beacon period, plan to move, as the movement destination beacon slot.

23.-28. (Cancelled).

29. (New) A radio communication method wherein a first radio communication apparatus transmits and receives a beacon by using a beacon period, comprising:

a step of receiving a second beacon from a second radio communication apparatus, including:

second beacon transmitter information including

a beacon slot position of the second radio communication apparatus that transmitted the second beacon received by the first radio communication apparatus, an identifier that specifies the second radio communication apparatus, and second moving status information indicating whether or not the second radio communication apparatus moves its beacon slot position; and

second beacon period occupancy information including a beacon slot position of the third radio communication apparatus that transmitted the third beacon received by the second radio communication apparatus, an identifier that specifies the third radio communication apparatus, and third moving status information indicating whether or not the third radio communication apparatus moves its beacon slot position;

a detection step in which whether there exists an empty beacon slot or not within a beacon period is detected before a beacon slot that is the first beacon transmission period of the first radio communication apparatus by using the second beacon transmitter information and the second beacon period occupancy information;

a step of producing first beacon transmitter information, when an empty beacon slot is detected in the detection step, by using a beacon slot position of the first radio communication apparatus, an identifier that specifies the first radio communication apparatus, and the first moving status information indicating a request for moving at a beacon slot position of the first radio communication apparatus;

a step of transmitting a first beacon at a beacon slot of the radio communication apparatus, the first beacon including first beacon period occupancy information generated by using the second beacon transmitter information and the first beacon transmitter information; and

a step of changing the beacon slot of the first radio communication apparatus to the empty beacon slot after the specified number of super frames after detection of an empty beacon slot in the detection step and after transmission of the first beacon, and before the end of beacon period from the beacon slot of the first radio communication apparatus, in each of super frames up to a specified super frame, when no reception of a fourth beacon transmitted by the fourth radio communication apparatus having a moving program or transmission of the fourth beacon from the fourth radio communication apparatus having the moving program is not confirmed from the fifth beacon period occupancy information included in the fifth beacon received from the fifth radio communication apparatus having no moving program.

30. (New) A radio communication apparatus, comprising:

A radio processing unit that receives a second beacon from a second radio communication apparatus, including:

second beacon transmitter information including a beacon slot position of the second radio communication apparatus that transmitted a second beacon received by a radio communication apparatus, an identifier for identifying the second radio communication apparatus, and second moving status information indicating whether or not the second radio communication apparatus moves its beacon slot position; and

second beacon period occupancy information including a beacon slot position of the third radio communication apparatus that transmitted a third beacon received by the second radio communication apparatus, an identifier for identifying the third radio communication apparatus, and third moving status information indicating whether or not the third radio communication apparatus moves its beacon slot position;

a beacon slot position control unit that generates first transmitter information by using a beacon slot position of the radio communication apparatus, an identifier for identifying the radio communication apparatus, and first moving status information

indicating a request for moving of a beacon slot position of the radio communication apparatus, when an empty beacon slot is detected within a beacon period before a beacon slot which is in the first beacon transmission period of the radio communication apparatus, by using the second beacon transmitter information and the second beacon period occupancy information;

a frame forming unit for forming a first beacon including first beacon period occupancy information generated by using the second beacon transmitter information, and the first transmitter information ;and

a beacon transmission command unit that detects the beacon slot position of the radio communication apparatus and commands the radio processing unit to transmit the first beacon formed by the frame forming unit,

wherein the beacon slot position control unit outputs beacon transmission timing to the beacon transmission command unit with the beacon slot of the radio communication apparatus changed to the empty beacon slot after the specified number of super frames,

in each of super frames up to a specified super frame, after detection of an empty beacon slot before a beacon slot of the radio communication apparatus, within a beacon period, and transmission of the first beacon on the basis of the first beacon period occupancy information, before the end of a beacon period from the beacon slot of the radio communication apparatus,

when no reception of a fourth beacon transmitted from the fourth radio communication apparatus having a moving program, or transmission of the fourth beacon from the fourth radio communication apparatus having the moving program is not confirmed from the beacon period occupancy information included in the fifth beacon received from the fifth radio communication apparatus having no moving program, and

the beacon transmission command unit outputs the first beacon from the frame forming unit to the radio processing unit in accordance with the beacon transmission timing after the change.